THIS ODD LOOKING CRAFT MAY BE NEXT NAVAL SURPRISE

United States Experts Believe That They Can Build a Sea Fighter That Will Astonish the World--- But Germany May Be Ahead of Us

Semi-Submerged Torpedo Craft Could Attack Battle Fleet and Work Destruction While Herself Almost Immune From Serious Hurt From Gunfire or Submarine

By ROBERT G. SKERRETT.

WHAT is the next surprise that naval architects have in store for the world?

Is it possible to modify radically existing types of battle craft?

Has the naval strategist anything in mind that will be totally unlike present warships—something that will upset the prevailing order of battle tactics upon the sea?

Experts answer yes to questions two and three. One of the foremost of American naval officers said not long ago:

"I believe we can build a ship here that will make the whole world sit up and take notice if we want to do so."

This assertion was brought out by a debate on the subject of naval increase, when the genesis of the modern dreadnought was discussed. An interesting light was thrown upon the origin and reason for being of that era making type of heavy ship of the line. The disclosure illustrates how kindred forces may be at work in calling into being another and no less startling departure in naval architecture. According to the officer in question:

"England has been criticised for inventing the dreadnought type on the ground that if she had not done so she would have maintained a greater preponderance over every other navy in her predreadnought types, and as the dreadnought type is far more efficient she therefore had to start even with other nations again. The reply to that is that she did not invent the type, but it was absolutely forced upon her.

"In the days when we were firing at each other at 2,000 or 3,000 yards a dreadnought was not a logical thing at all, because at those ranges you could use an 8 inch gun with great effect or a 6 inch gun. But as soon as Admiral Sir Percy Scott showed us how to train gun pointers with his new device it changed the situation materially. His whole invention was a method of training gun pointers.

"We applied it on our side and we talked to people on this side and to people on the other side of the Atlantic about it. I went over to England and talked to the gun people there and we finally, tentatively going from one range to another, found out that we could hit a target at 8,000 or 9,000 yards, which were considered enormous ranges in those days.

"You cannot hit anything with a 6 inch gun at those distances. It was therefore perfectly illogical for them to build any more battleships except with all big guns. Accordingly, the all big gun ship had to be built.

"We would have built the first one on this side if the authorities here had listened to us. England did not invent the all big gun ship. It was Admiral Sir Percy Scott who thought out how to shoot at long range, and the other fellows followed as a natural consequence. Big guns are the only ones that will do any particular damage at long range.

"The present conflict has made it plain that in actual warfare the nation with initiative will have a great advantage, and Germany has undoubtedly kept her foes guessing. No one knows what she is likely to spring next upon her antagonists, but past performances hint at certain possibilities."

Capt. William S. Sims thus describes a thoroughly practicable, novel order of battle craft. Its theoretical advantages are so evident to the experts that the likelihood of its appearing before long is more than a possibility.

"If you build a ship of 20,000 tons that has nothing but a protective deck, and so flat that nothing could get under it, that only has two towers, one forward and one aft, to control the ship, and no guns at all, but armed with eight or ten torpedo tubes on a side, and capable of making 35 knots, I would like to know what a fleet could do when one of them comes down in its midst," he says.

"There would be nothing to hurt if you did happen to hit her, and she could fire all the torpedoes she wants to at you. One of our young officers recommended a vessel of that type. Natural conservatism on the part of the older men who control the upper end of all services—and it is the natural conservatism of large bodies that controls our Government—stands in the way of just such a proposition; those men do not quite like the radical idea. But just the same one of those novel craft will pop up one of these days; and for all we know it will come out of Wilhelmshaven before this war is over."

It is a well known fact that the destroyer has proved the submarine's worst enemy, and for two reasons: first, because of its speed, combined with effective gun power, and second, owing to the difficulties of retaliation through torpedo attack, the submarine's only sufficient answer to the destroyer's rapid firers. More often than otherwise the underwater boat's principal weapon has sped harmlessly under the destroyer without scoring, simply because the destroyer draws far less water than the submarine's intended quarry, the big vessel.

The torpedo is ordinarily set to run deep enough to strike well below a large ship's armor belt and therefore is apt to pass without hitting below the keel of a destroyer. It was this idea that Capt. Sims had in mind when he said that the novel battle craft was to be built so that "nothing could get under it."

There is another advantage, too, in this arrangement. A ship so constructed would be able to operate in waters where ordinarily only light gunboats or destroyers could manœuvre in safety. Accordingly it would be easy for a craft of this character either to hide where least expected or to run to cover when the odds offered by armored ships were too heavy against her.

Great Britain has found it necessary to utilize monitors, especially modified for the work, in her offensive operations against the German positions on the coast of Belgium. Shallow draft and fairly heavy armaments have made these vessels reasonably effective. However, the monitors have not been able to destroy the German naval station at Zeebrugge and the Kaiser's designers have no doubt long been busy devising a naval foil to the British attack.

This probability in part is warrant for Capt. Sims's assumption that something out of the ordinary was likely to issue from Wilhelmshaven before the end of the present struggle. If it takes the form suggested the ship will not be a formidable foe only for England's monitors but it would certainly prove a very dangerous antagonist for well nigh any of Great Britain's heavy fighting ships.

As with so many things concerning our national defences no secret has been made here of this proposed order of war craft. Capt. Simms has said:

"It has been before our people for a long while. It has been discussed at the War College and papers have been written on it."

Foreigners have undoubtedly made themselves familiar with everything that has been given out about the ship and certainly the type would go a long way toward offsetting the disadvantage in numbers under which the German fleet labors. Moreover, there are economic reasons why a fighting ship of this peculiar type would commend itself especially to a people circumstanced as are the Germans now.

As Capt. Sims says: "I have always believed that a vessel could be designed in that way without any necessity for a waste of side armor, because she would have nothing above her water line to protect; that is, substantially nothing. She would have no turrets, which cost so much in weight, and she would have no big guns, which cost in the weight of the gun, ammunition, &c.

"She would carry two towers, from either of which the ship could be controlled: one to be used in case the other was knocked out. They would be of sufficient size to hold the people who manœuvre the craft. Her smoke pipe would be armored so that it could not be shot away so close to her deck as to do any particular damage. She could be armed with eight torpedo tubes on her side and she could carry a great many torpedoes for each one of those tubes."

At the Naval War College strategic experts have given this suggestion numerous theoretical tests. At that institution the ship is commonly known as the Schofield, because Commander Frank H. Schofield was the first to suggest the type. In the strategic problems worked out on the game board the ship has led to some startling results.

Because armor is not necessary for turrets, weight is not required for big guns, and as the craft lies low in the water it is possible to give her a very effective defence against subaqueous attack, and it is feasible to subdivide her below the water line into many compartments, the very number serving to localize damage. Accordingly the Schofield is assumed to be proof against torpedo attack, while above water her protective deck and sturdy sides would stand off shots even from the largest guns because of the glancing blows that hostile projectiles would strike.

Possibly the best evidence of what the Naval War College thinks about the Schofield can be gathered from Capt. Sims's own statement. While admitting that he did not know what such a vessel would actually do in time of conflict, he plainly expressed his apprehension of his chances if attacked by a craft of that order: "If I were in command of a fleet and one of those things came down on me I think I would turn the vessel over to the second in command and go down below."

It is not commonly understood by the layman that there are times when the torpedo even at long ranges stands a better chance of hitting than the big gun. The big gun may be seriously handicapped or impaired in its efficiency by reason of the weather. The torpedo, on the other hand, dives below the surface of the angriest sea and holds its depth despite tumbling waves as it speeds on toward its target.

It is for this reason that the Schofield is armed almost exclusively with torpedoes. Any guns that might be placed on deck would be only rapid firers intended to stand off destroyers or to deal with armed merchantmen or commerce raiders.

Success in a naval action depends very much upon gaining the advantage of position so far as wind and light are concerned. In moderate weather, with a moderate breeze blowing, a commander wants to have the wind in his face. That is to say, the wind should blow from the direction of the enemy, because then the smoke and gas from his own guns blow back and away and leave the commander with an unimpaired view of his foe, while the enemy's discharge hangs for a while on his lee and interferes with his vision and the speedy working of his ordnance effectively.

It is not an easy thing to gain the position of advantage, and half the success in doing this hinges upon invisibility. A vessel like the Schofield, lying low in the water and capable of making thirty-five knots an hour, would have the whip hand in this particular, because she could slip along at full speed unobserved, whereas a ship rising higher above the surface would be sure to betray herself against the horizon.

The part that the weather plays in battle tactics is thus described by one of the navy's eminent officers: "If you have been fortunate enough to get into position with the wind in your face and the foe to windward and it comes on to blow and kicks up a sea sufficient to splash water up over the sides of your ship when you are steaming twenty knots, then there is another difficulty. The spray will interfere very seriously with your firing because it keeps your telescopes wet.

Instead of looking through a clear telescope the situation is not unlike looking through the water when you are in swimming. Your vision is obscured. Water also may get into your turrets and into your fire control connections and possibly may put you at more or less of a disadvantage.

"Remember this, fleets fight nowadays at very long ranges, and if you sight an enemy that is bearing east from you and the conditions of wind and weather are such that you would like to have him bearing west it would take you all that day to get him there if he does not want you to do so, because if you try to steam around him he simply keeps you bearing abeam, while turning in an enormous circle, and after you have turned around about half way he will turn and go the other way.

"In the olden days when they fought at short range it was possible by certain manœuvrings to get the advantage of position with reference to the wind and sea, &c. It is nowhere near so easy to do it now. In fact, it is practically impossible, despite superiority in speed, within reasonable limits."

Because of her unusual features a ship patterned after the idea of the Schofield would not have to bother so much about advantage of position. Even while nearly buried under stormy seas it would be practicable for her commander to bring his broadside of torpedoes to bear, and every one of these weapons would be a good deal more formidable than the biggest of armor piercing projectiles.

The great shells fired by the German 12 centimeter guns carried between a hundred and fifty and two hundred pounds of high explosive. A modern 21 inch torpedo has in its warhead 350 pounds of explosive. At a speed of 30 knots, which is considerably below the maximum speed of the present day long range automobile torpedo, the torpedo will run accurately for fully 10,000 yards, and still longer ranges are promised if they have not actually been reached by some of the belligerents.

A vessel like the Schofield thus may be able to get within that distance of an approaching squadron and place herself squarely across the path of the oncoming enemy. With the foe moving at a rate of 30 knots an hour the torpedoes and the turrets would draw toward each other very rapidly, and in this capping position the semi-submerged armored vessel would be extremely difficult to hit, especially if the sea was really rough.

In modern naval actions the attack by gunfire counts upon scoring preferably by direct hits, but if the projectiles fall short then the hope is to strike by the shells ricocheting. That is, the missile impinges upon the water and then rises for a shorter flight like an oyster shell sent skimming over the water. During this shorter flight the projectile may strike the target and burst with destructive results. This is because the modern dreadnought is a towering craft.

The Schofield would lie so close to the sea level that it would probably escape most ricocheting shells, and if they struck the missiles would hit at so acute an angle that they would glance off and fail to penetrate the protective deck of heavy steel. True, all of this is mainly speculative, but the conclusions are based upon proving ground experiments, special tests and the actual performances in battle abroad.

One of the essential prerequisites to the successful handling of a modern battle fleet is what is technically termed the screen. This is nothing more than a circle of scouting craft which has for its centre the heavy ships of the battle line. Its object is to get in touch with the foe, to break through his screen and to observe and follow the movements of his main force.

It is for this reason that the battle cruiser has come into being. Owing to its great speed and formidable battery it is able to drive in through a foe's screen and cannot be bluffed off by vessels of less might. In work of this sort the Schofield would seem to be distinctly superior even to the battle cruiser because of her physical characteristics and her nearly invulnerable hull. Her sea speed would be better than that of any existing battle cruisers and once within striking distance her torpedoes would hit where her antagonists would be weakest.

Hard as the Schofield would be to deal with in daytime she would be a still greater menace when the light was dim or after nightfall. She could do all that a destroyer could do and much more. She would be distinctly superior to the submarine because the Schofield would have far better speed and would carry an infinitely heavier armament. She could get closer without fear of serious injury in order to make sure that the majority of her weapons scored.

Just what this increased offensive value really is can be gathered from the fact that it is nearly impossible for a defensive screen of destroyers completely to halt the attack of enemy destroyers when the latter make a concentrated attack in groups of ten or more. As an expert in this department of battle tactics has said: "You will get some of them as they go through, but you cannot stop them all, or even a majority of them, and I do not know of any more deadly attack than that which can thus take place at night."

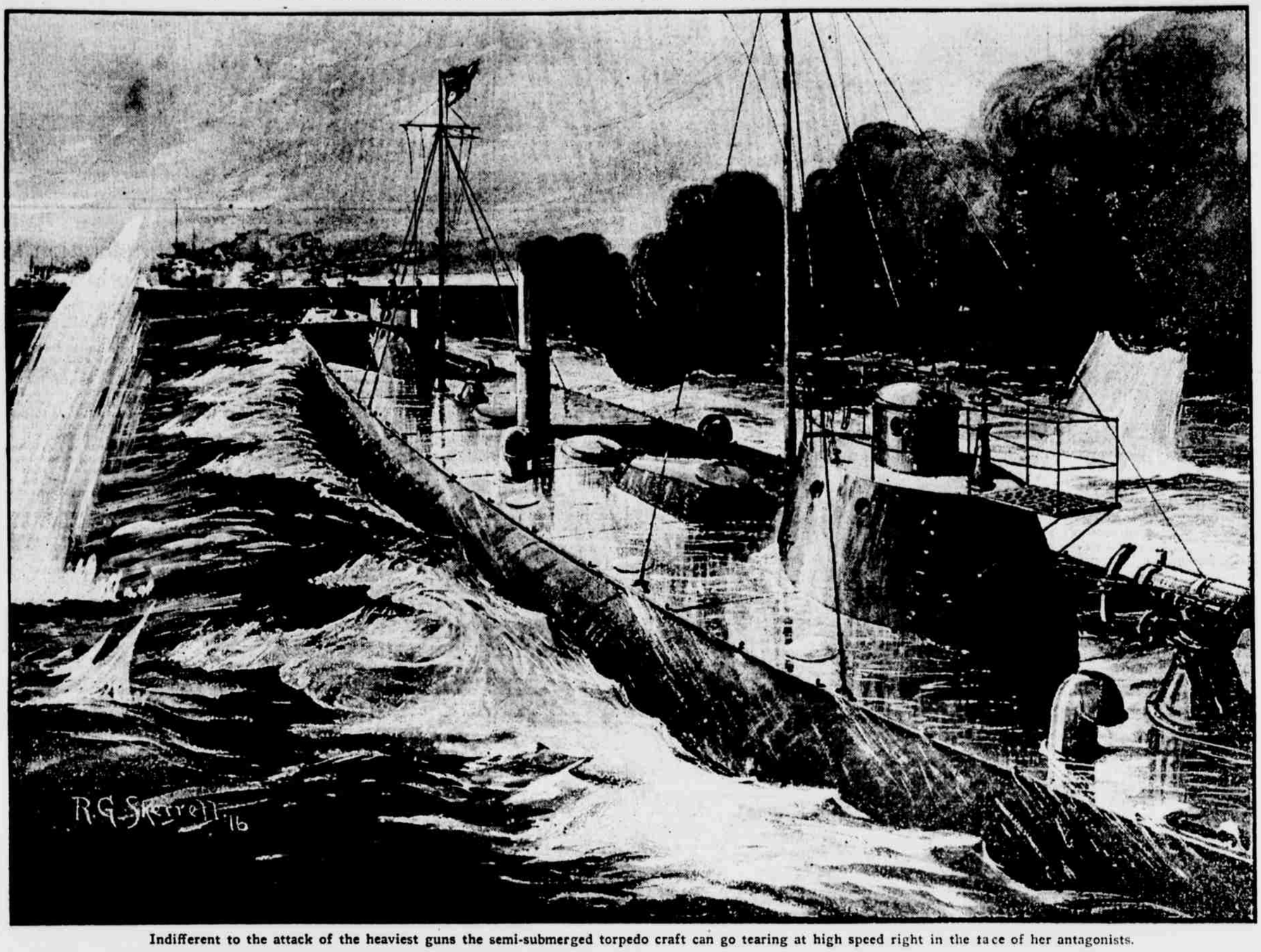
Of course, in rough or stormy weather the assaulting destroyers would be seriously handicapped by reduced speed, and therefore nature provides this partial protection at times. But the Schofield, being a big boat, would be quite indifferent to the weather. She would go ploughing straight through the seas, not over them, like a gigantic whale, and nose her way steadily and rapidly toward her objective.

Rear Admiral Bradley A. Fiske has emphasized the strategic or tactical advantage which any navy would enjoy which possessed a novel means of attack and was able to maintain the lead which that invention or creation brought in its train. It is a case of getting the jump on the foe and using the new weapon agressively while an antagonist would be at a loss to parry the unfamiliar blows.

But despite the fact that an American officer has conceived the Schofield no effort has been made by the naval authorities to add ships of this sort to the United States battle fleet. Upon this subject, Capt. Sims has said:

"I think we ought not to be too conservative. When you can lay down a ship which will apparently be of greater power than anything you can build for the same money you ought to get busy and build her, and you ought not to feel too badly chagrined about it if she does not turn out to do all you expect of her.

"The disposition has always been to hold back here. Those in power have said, 'Let us wait and see what the other fellows build and see how it works out.' If you do that you must always be in the rear of the procession instead of leading it."



Indifferent to the attack of the heaviest guns the semi-submerged torpedo craft can go tearing at high speed right in the face of her antagonists.

IMPERTINENT IMPRESSIONS—DOWN AT THE OFFICE - - - - By Bill

The boss's wife gets her first glimpse of the new stenographer.

These two who have fought for years now join forces in criticising the new typist who is flirting with the checking clerk.

The old gentleman from southern Pennsylvania, who has been doing business with the firm for forty years, on one of his semi-annual visits to New York.

Willie Jones, the new office boy, whose parents after squelching his ambition to become an animal trainer foisted him upon the world of business.

The "old man" who, even after the doctor has told him that his fits of temper may bring on apoplexy, continues to bawl out the office force on the slightest provocation.